Notice of Allowability	Application No.	Applicant(s)	
	10/667,024	IMMING ET AL.	
	Examiner	Art Unit	
	VAIBHAV (MANU) SAWHNEY	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the amendment submitted on 05/10/2007*.

2. ☒ The allowed claim(s) is/are *6,7,10,17 and 18; renumbered as 1,2,3,4 and 5*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance:

Claims 6-7, 10, and 17-18 are allowed.

The present invention is directed for implementing pointer and stake model for frame alteration code in a network processor. Each independent claim identifies the uniquely distinct features.

Regarding claim 6, a method for implementing a pointer and stake model for frame alteration code in a network processor comprising the steps of: providing a current pointer and a stake for a packet selected for transmit; maintaining said current pointer for tracking a current position for frame alteration operations in the packet; and maintaining said stake for tracking a start of a current header for frame alteration operations in the packet, which further includes the steps of providing an advance and set stake instruction at the end of a specified frame alteration sequence to advance said current pointer and said stake to the start of a next packet header.

The closest prior art is Witkowski et al. (US 6,098,110). Witkowski et al. show a method of providing a current pointer (TxCurPtr) (Col. 56, lines 25-28; Figs. 11A and 11B) and a stake (TxBasePtr) (Col. 56, lines 25-28; Figs. 11A and 11B) for a packet

selected for transmit, maintaining said current pointer for tracking a current position for frame alteration operations in the packet, and maintaining said stake for tracking a start of a current header for frame alteration operations in the packet comprising a transmit base pointer (stake) (is provided and maintained) (TxBasePtr) is a 28-bit pointer to the base (start of the header) of the current transmit packet header, that is, stake pointer for tracking the start of the current header, and another 28-bit transmit current pointer (TxCurPtr) points (provided and maintained) to the current data retrieval location (for tracking the current position of the frame alteration code/instructions) for the corresponding port of the switch (Col. 56, lines 25-28; Figs. 11A and 11B). Witkowski et al. further disclose that each TPI RX FIFO (receive queue) and TPI TX FIFO (transmit queue) of the data buffers 807a-d is preferably implemented as a circular buffer, with pointers maintained on both sides for writing and reading data (Col. 37, lines 65-67; Col. 38, line 1). Further the FIFO synchronization logic 818 generally operates to synchronize, maintain and update the pointers on both sides of each FIFO to ensure that data is properly written to or read from the appropriate TPI FIFO (Col. 38, lines 2-5). **However, Witkowski et al. do not show the steps of providing an advance and set stake instruction at the end of a specified frame alteration sequence to advance said current pointer and said stake to the start of a next packet header.**

Thus, the closest prior art Witkowski et al. (US 6,098,110) fail to anticipate the above features obvious.

Dependent claim 7 is allowed because of its obvious dependency on claim 6.

Regarding claim 10, an apparatus for implementing a pointer and stake model for frame alteration code in a network processor comprising: a current pointer maintained for tracking a current position for frame alteration operations in the packet; a stake maintained for tracking a start of a current header for frame alteration operations in the packet; said current pointer and said stake being set to a start of a packet selected for transmit; advance pointer instructions for allowing said current pointer and said stake to be advanced an arbitrary number of bytes into the packet, and further includes an auto-advance feature of frame alteration code instructions to advance said current pointer.

The closest prior art is Witkowski et al. (6,098,110), in view of Gentry, Jr. (6,356,951), further in view of Sorokopud (2005/0060418). Witkowski et al. show an apparatus for implementing a pointer and stake model for frame alteration code in a network processor comprising: a current pointer maintained for tracking a current position for frame alteration operations in the packet; a stake maintained for tracking a start of a current header for frame alteration operations in the packet; said current pointer and said stake being set to a start of a packet selected for transmit. However, Witkowski et al. do not show advance pointer instructions for allowing said current pointer and said stake to be advanced an arbitrary number of bytes into the packet and an advance and set stake instruction for advancing said current pointer and said stake to a start of a next packet header.

Gentry, Jr. shows the apparatus (Fig. 1A – host computer system) of providing advance pointer instructions allowing said current pointer to be advanced an arbitrary number of bytes into the packet.

Sorokopud shows advance pointer instructions for allowing said current pointer and said stake to be advanced an arbitrary number of bytes into the packet.

However, Witkowski et al., Gentry, Jr. and Sorokopud do not show an apparatus for implementing a pointer and stake model for frame alteration code that includes an advance and set stake instruction for advancing said current pointer and said stake to a start of a next packet header.

Thus, the closest prior art Witkowski et al. (US 6,098,110), in view of Gentry, Jr. (6,356,951), further in view of Sorokopud (2005/0060418) in combination fail to anticipate the above features obvious.

Regarding claim 17, a show a computer-readable medium encoded with a computer program product for implementing a pointer and stake model for frame alteration code in a network processor system, said computer program product including a plurality of computer executable instructions stored on a computer readable medium, wherein said instructions, when executed by the network processor system, cause the network processor system to perform the steps of: providing a current pointer and a stake for a packet selected for transmit; maintaining said current pointer for tracking a current position for frame alteration operations in the packet; and maintaining

said stake for tracking a start of a current header for frame alteration operations in the packet, further including the steps of providing an advance and set stake instruction at the end of a specified frame alteration sequence to advance said current pointer and said stake to the start of a next packet header.

The closest prior art is Witkowski et al. (US 6,098,110). Witkowski et al. show a computer-readable medium encoded with a computer program product (Fig. 3H shows a flowchart that can be implemented using a computer program product; Fig 5C) for providing a current pointer and a stake for a packet selected for transmit, maintaining said current pointer for tracking a current position for frame alteration operations in the packet, and maintaining said stake for tracking a start of a current header for frame alteration operations in the packet comprising a transmit base pointer (stake) (is provided and maintained) (TxBasePtr) is a 28-bit pointer to the base (start of the header) of the current transmit packet header, that is, stake pointer for tracking the start of the current header, and another 28-bit transmit current pointer (TxCurPtr) points (provided and maintained) to the current data retrieval location (for tracking the current position of the frame alteration code/instructions) for the corresponding port of the switch (Col. 56, lines 25-28; Figs. 11A and 11B). Witkowski et al. further disclose that each TPI RX FIFO (receive queue) and TPI TX FIFO (transmit queue) of the data buffers 807a-d is preferably implemented as a circular buffer, with pointers maintained on both sides for writing and reading data (Col. 37, lines 65-67; Col. 38, line 1). Further the FIFO synchronization logic 818 generally operates to synchronize, maintain and

update the pointers on both sides of each FIFO to ensure that data is properly written to or read from the appropriate TPI FIFO (Col. 38, lines 2-5).

However, Witkowski et al. do not show a computer-readable medium encoded with a computer program product for implementing a pointer and stake model for frame alteration code including the steps of providing an advance and set stake instruction at the end of a specified frame alteration sequence to advance said current pointer and said stake to the start of a next packet header.

Thus, the closest prior art Witkowski et al. (US 6,098,110) fail to anticipate the above features obvious.

Dependent claim 18 is allowed because of its obvious dependency on claim 17.

2. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAIBHAV (MANU) SAWHNEY whose telephone

number is 571-272-9738. The examiner can normally be reached on Monday - Friday 1000 - 1930 EST, alternating Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KWANG B. YAO can be reached on 571-272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Vaibhav A.

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KWANG BIN YAO
SUPERVISORY PATENT EXAMINER